

AMENDMENTS TO SPECIFICATION

Please replace the Abstract with the following:

The invention relates to an illumination system comprising at least one beam path with means for simultaneously illuminating the test object within at least one reference wavelength range and at least one data wavelength range, each of which is coordinated with one respective color channel of an imaging recording system. The at least one data wavelength range is used for detecting a medically relevant piece of information while the at least one reference wavelength range is at least nearly invariant in relation to said medically relevant piece of information. The inventive method combines the image values of evaluation windows or individual pixels of simultaneously recorded images into secondary images and image sequences while generating location-resolved dynamic characteristic values which are combined into function images. It is the object of an arrangement and a method for the recording and reproduction of images of an object to be examined to record the images of the object to be examined with reduced light stress and lower expenditure on adjustments and to generate secondary images which are substantially independent from brightness, are highly suitable for spectrometric studies of metabolism and microcirculation at the eye as well as for functional imaging, and can be adapted to the medical inquiry and make it possible to provide complex secondary image information while also enabling simple, practicable and extremely economical constructional variants. An illumination system contains at least one beam path with a device for simultaneous illumination of the object to be examined by at least one reference wavelength region and at least one information wavelength region, each of which is adapted, respectively, to a color channel of an image-generating recording system. While the at least one reference wavelength region is at least approximately invariant with respect to medically relevant information, the at least one information wavelength region is provided for detecting the medically relevant information. The method according to the invention combines the image values of evaluation windows or individual image points of simultaneously recorded images to form secondary images and image sequences while generating spatially resolved dynamic characteristic values which are combined to form functional images.